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Interactions between Institutional and Informal Credit Agencies in Rural India

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In an attempt to expand rural credit and displace the village moneylender, India created a system of rural cooperatives in the 1950s and expanded branch banking into rural areas in the 1970s. This article examines how these measures affected the rural market. It begins with the question of how large the expansion of institutional credit has been and the extent to which it has dislodged the village and nonresident moneylenders. A detailed comparison of three major surveys of the Indian rural credit market suggests that in various guises, the moneylender is still a major source of loans. The article also examines the (weak) evidence on intermediation between the formal and informal sectors. A formal model of the interaction between the informal moneylender and institutional lender is constructed under a variety of assumptions about the exclusivity of loan contracts and the competitive structure of the informal sector. The conclusions are drawn together in the form of five proposals for public policy.

In a landmark study of the system of credit and household indebtedness published by the Reserve Bank of India (RBI) in the early 1950s, the authors of the *All-India Rural Credit Survey* subjected the role and operations of the moneylender, who then enjoyed a dominant position as a source of finance, to critical scrutiny. They did so on the premise that, in India, agricultural credit presented a "twofold problem of inadequacy and unsuitability" (RBI 1954, vol. 2, p. 151). They envisaged only a minor place for him in their proposed solution, which took the form of a system of cooperatives covering all villages: "The moneylender can be allotted no part in the scheme [of cooperatives]. . . . It would be a complete reversal of the policies we have been advocating . . . when the whole object of . . . that structure is to provide a positive institutional alternative to the moneylender himself, something which will compete with him, remove him from the forefront and *put him in his place*" (RBI 1954, vol. 2, pp. 481-82; emphasis added).

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The authors of the *Survey* did not, of course, lay out a formal model of India's rural credit system as it then existed, nor did they provide a formal analysis of the effects of introducing a system of cooperatives upon its workings. The above quotations and the whole tenor of their argument do suggest, however, that they were strongly convinced that the moneylender possessed considerable market power, the exercise of which was made very profitable by the peasants' pressing needs for credit. This power was to be curbed by competition from cooperatives, despite the fact that the record of this particular form of state agency had been rather patchy, as the authors themselves recognized (RBI 1954, vol. 2, p. 229 passim). Thus their commitment to cooperatives was both ideological and something of an act of faith.

In the contemporary literature, the thesis that the moneylender remains powerful and that his dealings are an obstacle to progressive changes in rural economic life has been developed forcefully and at length by Bhaduri (1973) and his school. Although their analysis has not gone unchallenged, both theoretically (Srinivasan 1979) and empirically (Bardhan and Rudra 1978), it seems fair to say that they have provided the clearest formal statement of what appears to have been the position of the authors of the *Survey*.

Be that as it may, how have matters turned out? The decennial surveys that followed revealed a steady growth of lending by cooperatives and banks to rural households and a great erosion of the moneylender's position, as can be seen from table 1. In his various guises of professional lender, farmer, trader, and landlord, 80 percent of all rural debt was owed to him in 1951, but a mere 24 percent in 1981. Meanwhile, the proportion owed to institutions—cooperatives, banks, and government—rose from 7 percent to 61 percent, the residual being owed to friends and relatives. Thus public policy—first in the form of the cooperative movement, and in more recent years in the extension of commercial branch banking in rural areas—appears to have “put him in his place.” Indeed, table 1 suggests that the next decennial survey will reveal the moneylender to be on the fringe of things, his grip on rural life broken by a competing supply of institutional credit.

On the official evidence, therefore, it is unnecessary to go any further, which would make for a commendably brief article. I shall begin, therefore, by arguing that this evidence is open to very serious reservations, both on a priori grounds and in light of the evidence from independent surveys of various areas of India. This critical evaluation in section I suggests that official reports of the moneylender's impending demise are much exaggerated.

This conclusion opens the door to several questions. First, if the moneylender is still very much in business, what is his main guise? The evidence for his continued existence is evaluated in section I. It is argued in section II that the growing commercialization of Indian agriculture has encouraged the rise of the trader-moneylender, so that policies toward credit and commodity markets must be considered together. Second, to what extent has the expansion of credit from state agencies created opportunities for financial intermediation by

Table 1. *The Share of Debt of Rural Households Held by Different Creditors: The Official Evidence*
(percent)

Year and kind of debtor	Creditor									Total debt (millions of rupees) ^b
	Government ^a	Cooperatives	Banks	Relatives and friends	Landlords	Agriculturist moneylenders	Professional moneylenders	Traders and commission agents	Others	
1951										
Cultivators	3.9		3.7 ^c	11.4	3.2	25.2	46.8	4.7	1.1	—
All families	3.7		3.5 ^c	11.5	3.5	25.2	46.4	5.1	1.1	—
1961										
Cultivators	6.7	11.4	0.3	5.2	0.9	48.1	13.8	7.1	6.5	31,257
All families	6.6	10.4	0.3	5.8	1.1	47.0	13.8	7.5	7.5	36,100
1971										
Cultivators	7.1	22.0	2.6 ^d	13.1	8.1	23.0	13.1	8.4	2.6	32,917
All families	6.7	20.1	2.4 ^d	13.8	8.6	23.1	13.8	8.7	2.8	37,541
1981										
Cultivators	3.9	29.8	29.5 ^d	8.7	3.7	8.3	7.8	3.1	5.2	21,641
All families	4.0	28.6	28.6 ^d	9.0	4.0	8.6	8.3	3.4	5.5	23,361

—Not available.

a. Some government departments, especially those connected with the Ministry of Agriculture, make loans to households, often in kind, such as seeds and fertilizers.

b. At 1970–71 (wholesale) prices. One 1970–71 rupee is worth about 40 current U.S. cents at the official exchange rate in 1970–71.

c. Percentage is debt held by cooperatives and banks jointly.

d. Including insurance and provident funds.

Sources: RBI (1954, vol. 1, part 2, p. 3; 1977, p. 40; 1988, p. 38).

informal lenders? This is taken up in section III. Third, what is an appropriate model of competition between institutions, that is, formal credit agencies, and informal lenders, and what are the main conclusions to be drawn from it about the borrower's welfare and the allocation of resources? This is taken up in section IV. In section V, I make five proposals for public policy.

I. INDEBTEDNESS AND CREDIT AGENCIES: AN EVALUATION OF THE EVIDENCE

The fall from dominance of the moneylender, as revealed in table 1, invites critical scrutiny. The first reservation stems from the implausible behavior of certain key variables derived from the official surveys. Aggregate real debt fell by one-third from 1971 to 1981. More strikingly, the debt-asset ratio declined from 5.9 percent in 1951 to 1.8 percent in 1981. In view of the growth in incomes and the intensification of agriculture during this period, such a decline seems most unlikely. In examining the various components of this decline, attention will be focused on cultivating households, which the surveys define as those cultivating in excess of 0.05 acres. Such households accounted for 85, 88, and 92 percent of the total rural debt in 1961, 1971, and 1981, respectively, and 76 percent of all rural households in 1981 (RBI 1977, p. 6; RBI 1988, p. 31). This focus will also facilitate comparisons with the estimates derived from two independent surveys.

The key magnitudes are set out in table 2. First, the proportion of cultivating households reporting any debt declined from 69.2 percent in 1951 to 46.1 percent in 1971, and then to 22.3 percent in 1981 (line 1). This last figure and the steep decline from the proportion in 1971 clearly perplexed the authors of the first published report on the 1981 survey: "the present round estimate appears to be inexplicably low . . ." (NSSO 1986, p. 16).

Panikar and others (1988) have examined in considerable detail the purported decline in the proportion of cultivating households reporting any debt over the period 1961-81. They focus on the shift in sampling strategy, from relatively few villages (about 2,000) and many households per village (forty) in 1961, to more villages (about 8,000) and fewer households per village in 1971

Table 2. *The Indebtedness and Assets of Cultivators: The Official Evidence*

<i>Indebtedness or assets</i>	1951	1961	1971	1981
1. Proportion of indebted households (percent)	69.2	50.0	46.1	22.3
2. Debt per indebted household (rupees) ^a	1,114	1,314	1,281	1,324
3. Debt per household (rupees) ^a	771	657	590	296
4. Proportion of total debt owed to institutions (percent)	7.6	18.4	31.7	63.2
5. Assets per household (rupees) ^a	13,068	9,125	14,183	16,393
6. Debt-asset ratio (percent)	5.9	7.2	4.1	1.8

a. Rupees in 1970-71 wholesale prices.

Sources: RBI (1954, vol. 1, part 2, p. 3; 1977, p. 40; 1988, p. 38).

(twelve) and 1981 (eight). In doing so they make a persuasive case that this shift has resulted in less reliable estimates of the incidence of indebtedness for 1981 in relation to 1971, with an unclear result for 1971 in relation to 1961.

The possibility of large nonsampling errors must also be considered. The authors of the National Sample Survey Organization (NSSO) report in *Sarvekshana* (NSSO 1986) do so implicitly by drawing attention to the large differences between the estimates obtained from the central samples, which are canvassed by the NSSO's own investigators, and the estimates obtained from the state samples, which are canvassed by investigators of the state cadres. Because the central and state samples are both large, differences in the magnitude of their nonsampling errors seem likely culprits. In this connection, it should be noted that the quality and training of the NSSO's own investigators were superior to those of the state cadres. The share of NSSO observations in the total sample declined from more than 90 percent in 1961 to slightly less than 50 percent in 1981. Thus part of the decline in the incidence of indebtedness over that period may simply reflect a progressive systematic bias as the weight of the state estimates in forming the pooled estimates grew.

Second, the estimated level of (real) debt per indebted household has changed little since 1961, and increased by just under one-fifth between 1951 and 1981 (row 2 of table 2). In view of the technical changes in agriculture since the mid-1960s, the former finding strains belief. At least one component of the official estimates of cultivators' total debt supports this skepticism. The extent of underreporting of debt to cooperatives, according to the RBI's financial statistics for those institutions, increased from 17 percent in 1961 to 39 percent in 1971 (RBI 1977, p. viii). It seems unlikely that this increase stemmed wholly or even mainly from the shift in sampling strategy discussed above, for the estimated proportion of indebted households fell only a little and the efficiency of these estimates did not differ much for the years in question (Panikar and others 1988).

Taken together, the official estimates of the incidence and amount of indebtedness yield a level of real debt per cultivating household of about Rs300 in 1981, which is barely one-half of the level in 1971 and less than 40 percent of the 1951 level (see row 3 of table 2). Because holdings of real assets increased over the whole period (row 4), the decline in the debt-asset ratio (in row 6) is arithmetically "explained."

Whether the estimates on which the debt-asset ratio is based command credence or not is another matter. Slightly facetiously, one is tempted to conclude from table 2 that public policies are well on the way to banishing from rural economic life not only the private lender, but also indebtedness itself. Certainly this conclusion is consistent with the widespread view in rural India that institutional loans are really grants, because politicians regularly vie with one another in promising, if elected, to have such debts forgiven.

By calling into question the reliability of the official estimates of the extent of indebtedness, especially those for 1981, the above discussion also serves to

cast doubt, indirectly, on the changes in the composition of the aggregate debt owed to various agencies set out in table 1. Although no evidence has been adduced that the various components are subject to different rates of underreporting, the claim that informal lenders as a group enjoyed an utterly dominant position in 1951 is surely beyond dispute. In order to clinch the argument that the table underestimates the size of the informal sector, some direct evidence is needed.

Such a challenge to the official estimates, and hence any claims based on them, is provided by two independent surveys of particular areas of India. These surveys were mounted under the auspices of World Bank research project RPO 671-89, "Impact of Agricultural Development on Employment and Poverty in India" (hereafter WBRPO), and the village studies program of the International Crop Research Institute for the Semi-Arid Tropics (ICRISAT). The former covered forty households in each of thirty-four villages spread over the states of Andhra Pradesh, Bihar, and Punjab, and the latter covered forty households in each of six villages in semi-arid tracts of the states of Andhra Pradesh, Madhya Pradesh, and Maharashtra.¹ While neither can claim to be "representative" of the states in question, they are not especially atypical in any obvious way. Both surveys relied on enumerators who resided for long periods in the villages assigned to them. As noted above, the NSSO's design for 1981 involved far more villages, but only eight households per village, which were canvassed by a nonresident enumerator. Keeping the official estimates for 1951 as a benchmark, I shall now compare the estimates from the two unofficial surveys with the RBI's estimates for 1981.²

The RBI's and WBRPO's estimates for 1981 are compared in table 3. Unfortunately, whereas the former do not include borrowings, complete tabulations in the latter case are available only for borrowings. Nevertheless, one central comparison can be made directly, namely, the proportion of households reporting indebtedness (rows 1). In all three states, the WBRPO's estimates for 1981 are far higher than the RBI's, although they are close to the estimated incidence of indebtedness in the RBI's survey in 1951 (see column 2, row 1). In the case of Bihar, the WBRPO's estimate is more than four times the RBI's, to which one might add that most of those who have conducted fieldwork in Bihar will surely regard the RBI's estimate that only one-seventh of that state's cultivators were indebted as little short of preposterous.

The remaining comparisons between the RBI's and WBRPO's estimates are necessarily indirect. Real borrowings per borrowing household (rows 3) changed

1. The relevant sources for present purposes are, respectively, Bell and Srinivasan (1985, 1989), Binswanger and Rosenzweig (1984), and Binswanger and others (1985).

2. From 1961 on, the sampling design and execution of the decennial surveys have been the responsibility of the NSSO, whereas the results of those surveys have been reported in a series of monographs published by the RBI. Because the latter sources are well-known and widely accessible, the estimates reported therein will be referred to henceforth as those of the RBI.

Table 3. *The Debts and Borrowings of Cultivators: A Critical Comparison of Surveys*

State and variable	1951		1981		
	Debt (RBI)	Borrowings (RBI)	Debt		Borrowings (WBRPO)
			RBI	WBRPO	
<i>Andhra Pradesh</i>					
1. Proportion of households reporting	81.4	71.3	32.0	60.5	43.0
2. Amount per household	1,327	834	478	—	519
3. Amount per reporting household	1,630	1,170	1,493	—	1,210
4. Proportion transacted with institutions	3.9	4.7	43.6	—	35.4
<i>Bihar</i>					
1. Proportion of households reporting	79.2	68.7	13.8	61.7	37.6
2. Amount per household	593	322	88	—	167
3. Amount per reporting household	749	469	642	—	444
4. Proportion transacted with institutions	5.1	4.8	48.8	—	38.0
<i>Punjab</i>					
1. Proportion of households reporting	56.1	45.8	23.4	48.2	83.9
2. Amount per household	882	440	825	—	2,961
3. Amount per reporting household	1,573	961	3,527	—	3,529
4. Proportion transacted with institutions	9.0	18.8	76.9	—	53.7

—Not available.

Note: Rupees are in 1970–71 prices.

Sources: RBI (1954, vol. 1, parts 1 and 2; 1988, pp. 31, 45); Bell and Srinivasan (1985, 1989).

little between 1951 and 1981 in Andhra Pradesh and Bihar but increased almost fourfold in Punjab. Moreover, this is a conservative assessment, because RBI's borrowings refer to a complete year, whereas the WBRPO's borrowings refer to a single agricultural season.³ Now consider the ratio of debt to current borrowings averaged over all households (rows 2). In 1951 the values for Andhra Pradesh, Bihar, and Punjab were 1.59, 1.84, and 2.00, respectively. Because the average time to maturity of loans has probably lengthened over the period in question, one would expect the corresponding values for 1981 to be somewhat higher. Combining the RBI's estimates for debt in 1981 with the WBRPO's for borrowing, however, yields much lower ratios of 0.94, 0.53, and 0.28, respectively. Taken together, the RBI's estimates of indebtedness and borrowing for 1951 and the WBRPO's estimates of borrowing for 1981, which are broadly consistent with earlier beliefs based on the growth of agricultural incomes and the intensification of agricultural techniques, indicate that the RBI's estimates of indebtedness in 1981 are implausibly low. Allowing for the fact that the WBRPO's estimates are based on a single season of 1980–81, it seems fairly safe to conclude that real debt per household in Andhra Pradesh

3. The season of Rabi (November 1, 1980, to May 31, 1981) in Bihar and Punjab, and the season of Kharif (May 1, 1980, to December 31, 1980) in Andhra Pradesh.

and Bihar fell little, if at all, from its level in 1951, and it may have grown five- or even tenfold in Punjab. In contrast, according to the estimates in table 1, aggregate real debt grew little, if at all, between 1961 and 1971 and then fell by more than one-third in the following decade.

Doubts concerning the reliability of the RBI's estimates of indebtedness in 1981 are strengthened by an examination of ICRISAT's estimates for June 30, 1980. The last column of table 4 shows that ICRISAT's estimates of debt per household in Andhra Pradesh, Madhya Pradesh, and Maharashtra are roughly four, seven, and five times larger, respectively, than those of the RBI.⁴ The conclusion that the RBI's estimates of indebtedness in 1981 are implausibly low is surely irresistible.

The independent surveys suggest that the aggregate real debt of cultivators in 1981 was at least twice, and quite possibly five times, greater than the RBI's estimate (table 1, last column), which implies an aggregate debt of Rs43 to Rs108 billion (at 1970-71 wholesale prices; billion = 1,000 million) for cultivating households in 1981. In turn, this implies that the debt-asset ratio in 1981 lay in the range 3.8 to 9.5 percent, as opposed to the RBI's estimate of 1.8 percent. By way of direct comparison, ICRISAT's estimates of the debt-asset ratios in the villages surveyed were about 11 percent.

This revision of the estimated level of debt in 1981 also carries an implicit conclusion concerning the level of informal lending in rural areas. Accept for the moment the RBI's estimates of the combined share of landlords, moneylenders, and traders as creditors in total debt, which are 69.9, 52.6, and 22.9 percent in 1961, 1971, and 1981, respectively. Then this erosion in their share over the period in question was probably not accompanied by a substantial contraction in the volume of real debt owed to them. Thus, even if the moneylender is now "in his place," as the authors of RBI (1954, vol. 2, p. 482) would see it, he is also still very much in business.

There remains the possibility that the RBI's estimates of the combined *shares* of informal lenders in rural debt are also too low. A comparison of the estimates of debt and annual borrowings in table 3 reveals that the average maturity of loans exceeded one year in all three states in 1951. If institutions had made heavy inroads at the expense of informal lenders in the decades that followed, and the average maturity of institutional loans was at least as great as that of informal loans, which is plausible, then in later surveys one would expect the share of borrowings from institutions to exceed the share of total debt owed to them. Yet a comparison of the RBI's estimates of the latter share for 1981 with the WBRPO's estimates of the former (see table 3, rows 4), reveals that the contrary holds. The differences are, moreover, substantial, especially in the Punjab, where agriculture is most commercialized. Strictly speaking, the presence of sampling and nonsampling errors precludes any logical inferences

4. ICRISAT's sample comprises thirty cultivating and ten agricultural labor households in each village. Thus the RBI's estimates for *all* rural households are employed in the comparison.

Table 4. *Household Indebtedness to Credit Agencies in 1980-81: A Critical Comparison of Surveys*
(rupees per household)

State and survey	Relatives and friends									Total
	Government	Cooperatives	Banks	Landlords	Agriculturist moneylenders	Professional moneylenders	Traders	Others		
<i>Andhra Pradesh</i>										
RBI	32 (2.5)	278 (21.5)	254 (19.6)	96 (7.5)	125 (9.7)	191 (14.8)	117 (9.0)	57 (4.4)	142 (11.0)	1,293 (100.0)
ICRISAT ^a	— (—)	1,380 (26.6)	498 (9.6)	5 (0.1)	— (—)		2,330 ^b (45.0) ^b	56 (1.1)	914 (17.6)	5,183 (100.0)
<i>Madhya Pradesh</i>										
RBI	15 (2.2)	228 (33.8)	209 (31.0)	24 (3.6)	15 (2.2)	40 (5.9)	110 (16.3)	28 (4.3)	5 (0.7)	674 (100.0)
ICRISAT ^a	1,048 (21.6)	2,947 (60.7)	98 (2.0)	186 (3.7)	— (—)		190 ^b (3.9) ^b	226 (4.7)	162 (3.4)	4,857 (100.0)
<i>Maharashtra</i>										
RBI	46 (3.9)	664 (56.0)	331 (27.9)	78 (6.6)	9 (0.8)	14 (1.2)	15 (1.3)	9 (0.8)	18 (1.5)	1,186 (100.0)
ICRISAT ^a	815 (13.6)	3,320 (54.6)	58 (1.0)	1,450 (23.8)	— (—)		409 ^b (6.7) ^b	— (—)	35 (0.5)	6,086 (100.0)

—Not available.

Note: The figures in parentheses are percentages.

a. Two villages in a semi-arid district.

b. Debt to both agricultural and professional moneylenders.

Sources: RBI (1988, p. 45); Binswanger and others (1985) for ICRISAT.

to be drawn from comparisons of two different surveys. Nevertheless, it can be claimed with some confidence that in Andhra Pradesh, Bihar, and Punjab, the erosion of the informal lender's *relative* position has been probably much less marked than table 1 would suggest. ICRISAT's estimates provide strong support for this conclusion for a semi-arid tract of Andhra Pradesh, although they broadly agree with the RBI's estimates for Madhya Pradesh and Maharashtra. Taken together, the independent surveys support the contention that in a diverse and important set of states, the relative share of informal lenders has declined less markedly over the past two decades than the RBI's estimates would indicate.

To sum up, although the moneylender did lose ground relative to institutions over the period from 1951 to 1981, he remained a very important source of finance to rural households, and the expansion of aggregate debt was almost surely so great as to imply that his volume of business grew. With this important preliminary matter largely settled, I turn now to how he responded to the competition—and opportunities—offered by the advance of cooperatives and, more recently, the commercial banks.

II. INFORMAL LENDERS AND PUBLIC POLICY

The lender has several guises, which reflect what anthropologists call the multiplex nature of rural life. The same individual may lend to cultivators and laborers. If he has land and cultivates part of it, those of his tenants and laborers who borrow from him will think of him as a landlord, while other owner-cultivators will think of him as a cultivator who pursues moneylending on the side. In certain areas of India, some of the borrowers (though almost certainly not those who are laborers) may be his relatives and regard themselves as such in their dealings with him. Similarly, the village shopkeeper often lends to his customers in the lean season and may engage in commodity trading on a small scale at harvest time. As we shall see, traders and commission agents (who operate as brokers between farmers and both private traders and state purchasing agencies) are often heavily involved in financing cultivation, with the provision that their clients sell their crops to, or through them, respectively. Thus the lender's guise is very much in the eye of his clients, and though the categories in table 1 look tidy and mutually exclusive, they must have seemed elastic and slippery to the respondents whose replies are reported therein.

The authors of the *All-India Rural Credit Survey* (RBI 1954) and their successors were aware of these difficulties of interpretation. Only interest-free loans between relatives or friends qualified for the category "relatives and friends"; only loans to tenants qualified for "landlords"; and the remainder were categorized by the principal business of the lender (RBI 1954, vol. 1, part 2, p. 1). Even so, this scheme is not watertight and the quality of its execution by individual enumerators was surely variable. For these reasons, the changes in the composition of the debt owed to individual lenders reported in table 1

must be viewed with considerable caution. Nevertheless, such a comparison is called for if the influences of public policies on informal lending are to be identified and understood.

Between 1951 and 1961, according to table 1, the inroads made by institutional agencies into rural lending were fairly limited. Regarding the sources of credit, the striking change that occurred in this period was the overwhelming displacement of the professional by the agriculturist moneylender. It will now be argued that this displacement was more apparent than real.

There were two policy interventions that are especially relevant here. First, the state attempted to register professional moneylenders and regulate their practices. Although some may have gone out of business altogether as a result, most probably assumed another guise and continued moneylending as a sideline. Second, during the 1950s the zamindars⁵ interests in land were abolished in favor of their registered tenants, and other land legislation that made own-cultivation more attractive was also enacted. In all likelihood, therefore, many rural, and some urban, professional moneylenders responded by taking up cultivation in a substantial way. Certainly it would have been easy for them to do so. In 1951, before the abolition of zamindari, 68 and 29 percent, respectively, of rural and urban professional moneylenders reported cultivation as an additional activity, and a further 10 and 14 percent, respectively, reported that they were noncultivating landlords (RBI 1954, vol. 2, p. 170). Trading and related activities, which are not mutually exclusive with owning or cultivating land, were pursued by 38 and 78 percent, respectively. Only 2 and 6 percent of village and urban moneylenders, respectively, reported no other profession but moneylending in 1951 (RBI 1954, vol. 2, p. 170). There is thus no reason to believe that departures from this line of business were large. In all probability, most of the professional moneylenders who were active in 1951 had assumed the guise of agriculturalist moneylenders, who were extremely active in 1961.

In the next two decades, according to table 1, the agriculturist moneylender suffered a fall from dominance at the hands of, first, the cooperatives and, second, the commercial banks, which were nationalized in 1969. In contrast, the combined share of landlords, professional moneylenders, and traders decreased quite modestly.

The findings of the independent surveys by ICRISAT and the WBRPO cast considerable doubt on some aspects of this "official" account. In ICRISAT's areas, the traditional moneylender was still (just) holding his own in Mahbubnagar district, Andhra Pradesh; institutions were utterly dominant in Akola district, Madhya Pradesh; and relatives and friends were important sources in

5. Zamindars were essentially tax-farmers, who held title to land on condition of payment of a fixed sum to the government and leased their land to tenants. There were often several layers of subtenancy, and in such cases those who actually cultivated the land did so under oral contracts. The zamindari system was established under the terms of the Permanent Settlement of 1793.

Table 5. *The Numbers of Lending Households in the WBRPO's Villages, Rabi Season, 1980-81*

Household type	Andhra Pradesh		Bihar		Punjab	
	Lenders	Total	Lenders	Total	Lenders	Total
Landlords	9	84	4	29	0	78
Owner-cultivators	270	2,165	79	719	56	779
Owner-tenants	13	151	11	173	7	177
Pure tenants	4	79	1	60	0	131
Attached laborers	32	137	1	200	0	129
Landless laborers	2	489	0	384	0	816
Landed laborers	27	646	0	470	0	94
Other laborers	0	147	0	178	3	188
Traders and moneylenders	6	110	8	68	39	125
Others	38	649	18	214	3	477
Total	400	4,657	122	2,494	108	2,998

Source: Bell and Srinivasan (1985).

Sholapur district, Maharashtra (see table 4). In Akola and Sholapur the traditional moneylender had departed the scene some time before (Binswanger and others 1985). In the WBRPO's villages, a small proportion (3-9 percent) of all households reported making loans in the single season canvassed in 1980-81 (see table 5, last row). These are, of course, almost certainly underestimates, because respondents are usually more reluctant to reveal what they have lent than what they have borrowed, especially in the earlier stages of an enumerator's stay. Even taking the data in table 5 at face value, owner-cultivators and owner-tenants were relatively active as lenders in all three states, as were village traders, one-third of whom were lending in Punjab. Thus the agriculturist moneylender and resident trader (usually shopkeeper) are still in business in these villages, from undeveloped Bihar to commercialized Punjab.

The really intriguing feature of the WBRPO's data, however, is the importance of *nonresident* traders and commission agents as sources of finance in the most commercialized areas. Table 6 sets out the borrowings of cultivating households by source, with private loans classified according to whether they were interlinked with tenancy (land) or marketing (output) contracts, the residual category "other" being almost entirely made up of untied loans. Cross-sectionally, it is clear that commercialization is associated with heavier borrowings, not only from institutions, but also from traders and commission agents. Indeed, the average amount borrowed with output interlinking in Punjab greatly exceeded the average amount borrowed from all sources in Andhra Pradesh and Bihar. The same pattern was also evident *within* the latter states: traders and commission agents were making substantial loans to farmers cultivating potatoes near Patna in Bihar, paddy in the command area of the Nagarjunasagar irrigation system, cotton in Kurnool district, and paddy and sugarcane in Chittoor district, all in Andhra Pradesh. Thus trade and (interlinked) money-

Table 6. *The Borrowings of Cultivating Households in the WBRPO's Villages by Source and by Interlinkages, Rabi Season, 1980-81* (rupees per household)

State	Loans from institutions	Loans from informal lenders interlinked with:			Total
		Land	Output	Other ^a	
Andhra Pradesh	486 (35.4)	1 (—)	149 (10.9)	738 (53.7)	1,374 (100.0)
Bihar	168 (38.0)	11 (2.4)	16 (3.6)	247 (56.0)	442 (100.0)
Punjab	4,213 (53.7)	50 (0.6)	2,258 (28.8)	1,328 (16.9)	7,849 (100.0)

—Not available.

Note: The figures in parentheses are percentages.

a. All but a very small part is not interlinked.

Source: Bell and Srinivasan (1985).

lending flourish with advancing commercialization, as simple intuition would suggest.

Stated in a somewhat different form, this thesis has been pursued with considerable vigor by Harriss (1982, 1983), on the basis of her detailed field studies in Tamil Nadu. Harriss reports that in the early 1970s in North Arcot district, about half of the traders' clients also borrowed from them. She argues that moneylending was a relatively competitive activity, with numerous lenders and fairly easy entry. In support of this position, she points first to the fact that interest rates barely exceeded legal ceilings. Second, in regard to ease of entry, a fall in the volume of finance available from traders at one juncture appeared to induce a great expansion in pawnbroking, which catered heavily to poorer households (Harriss 1982).

It may be claimed with some confidence, therefore, that public policies that have promoted the growth of agriculture and its commercialization have also encouraged the rise of the trader and his associated lending activities. Indeed, Harriss goes so far as to assert that Tamil Nadu is a "Merchant State" (1983, p. 81).

III. INSTITUTIONAL FUNDS FOR INFORMAL LENDERS

One potentially important form of interaction between institutional and informal credit agencies is financial intermediation, the extent of which ought to have been influenced by the great expansion of institutional credit over the past forty years. I first summarize for 1950-51 some features of the pattern of intermediation (see table 7). Fewer than 4 percent of village moneylenders borrowed from commercial banks, but 35 percent of traders did. One-fourth of urban moneylenders borrowed from commercial banks and some of them

Table 7. *Moneylenders' Dependence on Borrowed Funds, 1951-52*

Creditors	Number responding	Number borrowing	Number borrowing from:				Total ^a
			Commercial banks	Indigenous bankers	Other moneylenders	Others	
Village moneylenders	622	174	7 (3.5)	11 (5.5)	136 (68.0)	45 (22.5)	199 (100.0)
Urban moneylenders	2,854	966	320 (25.5)	84 (6.7)	673 (53.6)	178 (14.2)	1,255 (100.0)
Traders	5,047	3,246	1,567 (34.6)	214 (4.7)	1,447 (32.0)	1,299 (28.7)	4,527 (100.0)
Indigenous bankers	152	83	34 (29.1)	13 (11.1)	42 (35.9)	28 (23.9)	117 (100.0)

Note: The numbers in parentheses are percentages of the "Total" column.

a. This will exceed the number borrowing if some lenders themselves borrowed from more than one source.

Source: RBI (1954, vol. 1, part 2, pp. 670-79).

re-lent funds to other private lenders. It is also clear that a significant proportion of those who depended on borrowed funds borrowed from more than one source.

Unfortunately, it is very difficult to arrive at quantitative estimates of the extent of such intermediation. Cultivating families borrowed, on average, Rs2.0 and Rs11.5 from commercial banks and traders, respectively, in the year 1951-52 (RBI 1954, vol. 1, part 2, p. 3). Loans to cultivating households accounted for 2.9 percent of all commercial bank advances (RBI 1954, vol. 2, p. 181), and advances for wholesale trade in agricultural commodities accounted for 16.8 percent (RBI 1954, vol. 2, p. 183). Directly and indirectly (through traders and urban moneylenders) commercial bank lending enlarged the finance available to rural households even in 1951-52, though both were certainly small relative to the total borrowings of cultivating households.

The picture after 1951 is much less clear, in part because the RBI in concert with the NSSO has ceased its inquiries of lending agencies. It is therefore necessary to rely on independent studies, which inevitably deal with limited geographical areas. Harriss (1982) constructs a convincing case that with the ending of the cooperative monopoly in fertilizer marketing, intermediation became extensive in North Arcot in the early 1970s. Dealers in agro-inputs were able to obtain bank credit both for the purchase of goods for resale and for crop production on their own farms and those of their clients. The interest rates charged by dealers were higher than those charged by cooperatives, but the dealers still accounted for about half of all fertilizer sales. In contrast, bank loans to paddy and rice traders were prohibited, but enforcement was rather feeble, and such loans were certainly made, perhaps on a large scale. Harriss

Table 8. *Total Borrowings by Resident Traders and Moneylenders in the WBRPO's Villages, Rabi Season, 1980-81*
(rupees)

<i>Andhra Pradesh</i>		<i>Bihar</i>		<i>Punjab</i>	
<i>Informal</i>	<i>Institutional</i>	<i>Informal</i>	<i>Institutional</i>	<i>Informal</i>	<i>Institutional</i>
4,100	0	42,900	79,400	170,300	10,300
(0.2)	(0)	(5.9)	(20.1)	(3.2)	(0.2)

Note: The figures in parentheses are proportions of the total amount borrowed by all households from the source in question.

Source: Bell and Srinivasan (1985).

also notes that larger farmers were themselves very active as lenders, drawing upon the commercial banks, cooperatives, and dealers as sources of funds.

The WBRPO's survey was confined to households resident in the sampled villages, so that direct information on the financial dealings of nonresident traders and commission agents, who are a very important source of rural credit in commercial areas, is not available. Table 8 reports borrowings by resident traders and moneylenders from informal and institutional sources in 1980-81. It suggests that intermediation involving institutional agencies and resident trader-moneylenders was probably very small in Andhra Pradesh and Punjab. Intermediation may have been significant in Bihar, however, where institutional borrowings of resident traders and moneylenders represented 20 percent of the total amount borrowed by all Bihar households in that season.

IV. COMPETITION BETWEEN INFORMAL LENDERS AND STATE AGENCIES

All lenders face three problems arising from asymmetric information and the fact that disbursement and repayment are necessarily separated in time. First, the terms of the loan contract may influence the characteristics of those who present themselves for loans and, hence, the distribution of the lender's returns. If the lender cannot at reasonable cost distinguish good borrowers from bad, he faces a potential problem of "hidden information," to use Arrow's (1985) terminology—or, as it is usually called, adverse selection. Second, even if the characteristics of the borrower are fully known to the lender, the terms of the loan may influence the borrower's activities and performance in ways that affect the lender's returns. In an uncertain environment, where poor returns from the borrower's activities may result from bad luck rather than indolence, prohibitively costly monitoring of the borrower's actions will confront the lender with the problem of "hidden action"—or, as it is usually called, moral hazard. Third, when the loan falls due, the lender must recover principal and interest, either out of the borrower's returns or, if these are insufficient, out of any collateral specified in the loan contract. Thus he faces a potential problem of enforcement.

Before attempting to analyze competition between informal lenders and institutional agencies, therefore, some comments on the former's system of operation are needed.

Moneylenders' Modus Operandi

Many of those who have firsthand experience in rural credit markets emphasize the moneylender's intimate knowledge of the borrower's character and circumstances. Writers as diverse as Darling (1925), the authors of RBI (1954), and Harriss (1982) put such knowledge at the center of the moneylender's system of operation. For example: "There is little that escapes his eye in the circumstances of his debtors or of those who may one day be his debtors. What cooperatives merely postulate, he actually possesses, namely, a local knowledge of the 'character and repaying capacity' of those he has to deal with" (RBI 1954 vol. 2, p. 171).

This passage makes it clear that moneylenders take the problem of adverse selection very seriously. It suggests that they solve it by confining their lending to a group of known clients, such as they might build up by operating in a particular village or set of villages over a period of years. Of course, they must still make the relevant investment in building up a clientele and adding to it when the occasion looks promising. Once they have done so, however, what was hidden information about their clients' characteristics becomes inside knowledge, which other potential lenders must acquire if they are to compete. This arrangement is a far cry from the pooling and separating equilibriums that feature so prominently in the literature on adverse selection in insurance markets, in which the characteristics of agents are not ascertained *ex ante*.

The fact that lenders prefer to deal only with longstanding clients and take on new ones reluctantly (and only then after extensive inquiries) makes it costly for borrowers to switch to other lenders. Because the game between a lender and his clients is likely to be repeated over a succession of seasons, the lender should find it less difficult to distinguish between bad luck and poor performance, especially when his clients reside in the same village and the risks each faces from variations in the state of nature should be quite strongly correlated. These considerations will influence the borrower's actions in ways that mitigate the problem of moral hazard for the lender. They do not, however, eliminate it entirely. Of the 622 village moneylenders and 2,854 urban moneylenders who responded to the RBI's inquiries in 1951, 344 and 1,497 replied to the question concerning the proportion of their loans to agriculturists which they considered doubtful. Of those with doubtful loans, 104 village and 529 urban moneylenders said that such loans were 10 percent or more of their total lending (RBI 1954, vol. 1, part 2, pp. 477, 501). In regard to litigation for recovery, the numbers answering the question were 187 and 1,162, respectively, of whom 46 and 383, respectively, put the proportion of loans thus affected at 10 percent or more (pp. 477, 503). This suggests that moneylenders had not fully overcome the problems of moral hazard and enforcement. More-

over, changes in India's legal and political climate since 1951 have surely exacerbated them, as politicians regularly vie with one another in promising, if elected, to impose a moratorium on the repayment of informal and institutional debts alike. If this were done, informal lenders could no longer resort to litigation to recover their loans—though other methods would remain open.

Relative to other lenders, the trader-moneylender is especially well placed to enforce his claims. When the crop is sold to or through him, he is in a position to exercise first claim on the proceeds, to the detriment of the borrower's other creditors. There is also sometimes cooperation among traders in this regard, especially in towns with well-organized commodity markets. In Chittoor, for example, a commission agent who dealt in *gur* (a sugar product) told me that agents frequently know one another's clients. If a farmer attempted to sell through an agent other than the one with whom he normally dealt, the new agent would deduct principal and interest on the loan, basing his calculations on the usual rule of thumb relating the size of the loan to the quantity to be delivered, and hand over the said sum to the first agent. Others doing field research have reported similar practices elsewhere in India.

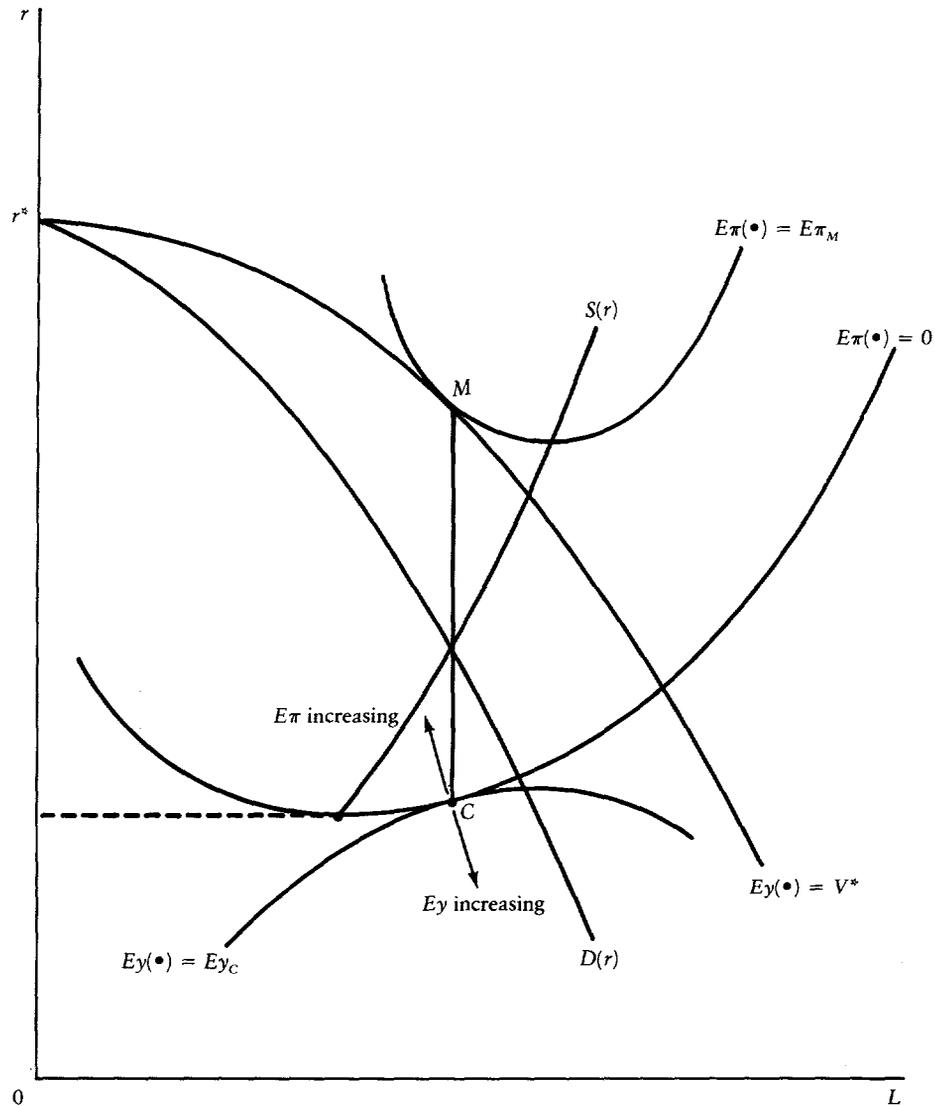
The Terms of the Credit Contract in the Absence of State Agencies

In order to analyze the determination of the terms of an informal loan and how those terms will be affected by the presence of a state agency in the setting just described above, a model of some kind is needed. The one underpinning the graphic analysis that follows is analyzed in detail in Bell (1990) and has something in common with that of Milde and Riley (1988).

The moneylender is assumed to be risk-neutral, so that he will maximize expected profits, $E\pi$. In general, the iso-expected profit curves will be U-shaped in the space of the size of the loan, L , and the rate of interest, r , as drawn in figure 1. This follows from the usual influence of fixed costs, which include the lender's investments in acquiring inside knowledge about his clients, and the fact that in the presence of moral hazard, the probability of default will at some point increase with the size of the loan. In order to keep the exposition simple and to avoid an excursion into certain technicalities, the contours of the expected-profit map have been drawn as smooth and strictly convex everywhere; but it should be noted that these properties may fail to hold, even with quite "nice" underlying assumptions.

There are two polar cases of particular interest. First, if there is free entry into moneylending, lenders will make zero expected profits. Thus, on the basis of his knowledge of the borrower's characteristics, the technology, and the distribution of the states of nature, each lender will offer the borrower the entire menu of contracts defined by the contour $E\pi(L, r) = 0$. Faced with this opportunity set, the borrower, who is also assumed to be risk-neutral, will select that contract which maximizes his expected net income, Ey . In figure 1, this is depicted as point C, where an iso-expected net-income contour is tangent to the zero-expected-profit contour $E\pi(L, r) = 0$. Observe that C lies to the

Figure 1. *The Loan Contract and Preference Maps in the Absence of an Institutional Lender*



left of the borrower's notional demand schedule $D(r)$, so that the borrower is rationed in the sense that at the interest rate in his optimum contract, he desires a larger loan than the one specified in that contract. Such a loan is not offered, however, because it entails negative expected profits for the lender.

At the other extreme, suppose the lender is a monopolist. In the absence of any competition, the lender is constrained only by the requirement that the contract he offers be at least as attractive as the borrower's reservation alternative of self-financing his activities, an option which yields the borrower an expected net income of V^* . Hence, the boundary of the lender's opportunity

set is the contour $Ey(L, r) = V^*$. In figure 1 the contract that will maximize his expected profit is at point M , where an iso-expected-profit contour is tangent to $Ey(L, r) = V^*$. The lender will make the borrower (something slightly better than) this all-or-nothing offer. Observe that it lies to the left of the notional supply schedule, $S(r)$, and to the right of $D(r)$. At the rate of interest at point M , the borrower would prefer to have a smaller loan, whereas the lender would prefer to extend a larger loan.

Between these two extremes, both parties will have some bargaining power and the final outcome will depend on their relative bargaining strengths. It is plausible that the outcome will be Pareto-efficient, so that it will lie somewhere on the contract locus CM .⁶

Exclusive Loans from Institutional Lenders

I now examine how the arrival on the scene of state agencies affects the welfare of borrowers and informal lenders and the terms of their loan contracts. In order to do this, I must begin by describing the terms offered by state agencies.

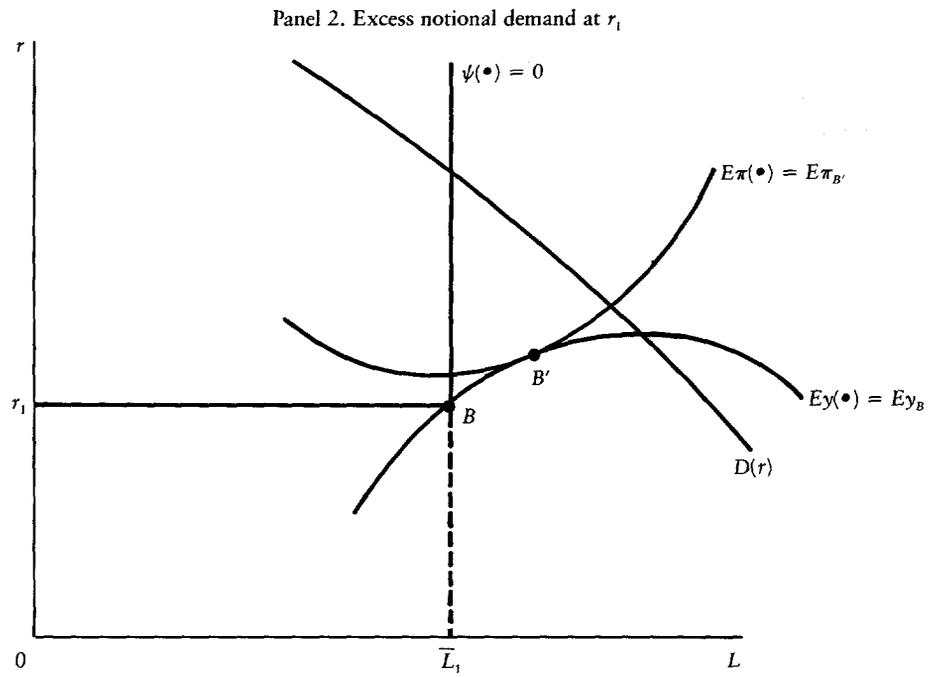
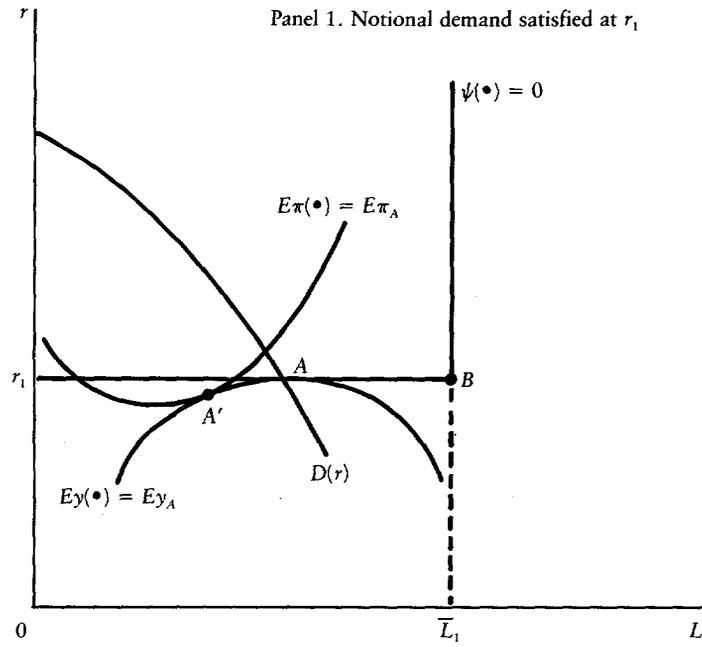
Assume that the rules of a cooperative or bank stipulate that a member or client in good standing qualifies for a loan up to a certain ceiling (or ration) L_1 at a given, regulated rate of interest r_1 . The ceiling depends on the purpose of the loan, the extent of the borrower's activity (say, the area to be devoted to certain crops), and the form of any associated collateral, which may be just the crop itself. An influential individual might be able to get the rules bent to his advantage, particularly in regard to the ceiling, but that will not detain us here. For the moment, it will simplify the exposition if informal lenders are ignored. Then the boundary of the borrower's opportunity set in the space of (L, r) in dealing with a bank or cooperative is represented by $\psi(\bullet) = 0$, as depicted in figure 2. When an individual's *notional* demand for credit, $D(r)$, is less than \bar{L}_1 , the loan chosen, L_1^0 , will also be less; when greater than or equal to the ceiling, $L_1^0 = \bar{L}_1$. These two qualitative outcomes are depicted in figure 2. In panel 1, the borrower's notional demand for credit at the rate r_1 , $D(r_1)$, is less than his ration L_1 . Thus he chooses point A , where his notional demand schedule, $D(r)$, intersects the horizontal section of $\psi(\bullet) = 0$. By the definition of $D(r)$, the iso-expected net-income contour that passes through A , $Ey(\bullet) = Ey_A$, is tangential to $\psi(\bullet) = 0$ at that point. In panel 2, $D(r_1)$ exceeds L_1 so that the borrower must make do with his ration, which puts him at point B , the "elbow" of $\psi(\bullet) = 0$. Because the borrower is rationed, the iso-expected net-income contour passing through B , $Ey(\bullet) = Ey_B$, must be upward-sloping at B .

Equilibrium in the Credit Market with Exclusive Contracts

I now reintroduce the informal lender and begin with the case in which he was a monopolist before the establishment of a cooperative or a branch of a

6. In this particular model, it turns out that CM is a vertical line, a result obtained by Milde and Riley (1988) for a similar model.

Figure 2. Competition between an Institutional and an Informal Lender: Exclusive Contracts



state bank. This would approximate the situation in many developing areas, where low productivity and limited commercialization limit the size of the market for loans. If both the moneylender and the state agency can enforce exclusive contracts, then he must offer the farmer a contract that is at least as attractive as (L_1^0, r_1) . Because the borrower's iso-expected net-income contours are inverted U shapes in the space of (L, r) , the moneylender's optimum will be the point of tangency between the map of iso-expected-profit contours and the borrower's iso-expected net-income contour corresponding to the reservation alternative of borrowing from the institutional lender. In panel 1 of figure 2, the point of mutual tangency, A' , is depicted as lying to the left of A ; but A' will lie to the right of A if A lies to the left of the supply curve. In both cases the rate of interest in the contract offered by the informal lender is less than r_1 , but it is packaged with a particular size of loan in an all-or-nothing deal. In panel 2, the moneylender's optimum is the all-or-nothing offer depicted as point B' , a contract in which both the rate of interest and the size of the loan exceed their institutional counterparts at B .

Now recall the benchmark case of the monopolist moneylender in which the borrower does not enjoy the alternative opportunities described by $\psi(\cdot) = 0$, (because either there is no institutional lender or he is unable to obtain a loan; $L_1 = 0$). In that case, he will obtain V^* from his loan from the moneylender. In light of past and current interest rate policies, it can be assumed that for most would-be borrowers, r^* exceeds r_1 by a substantial margin. Hence, the moneylender's expected profits will be lower and the borrower's expected net income will be higher, following the arrival of the institutional credit agency—provided the borrower can obtain an institutional loan. Figure 2 is just a formal representation of how, if the moneylender had monopoly power in the informal credit market, the institutional lender has “put him in his place”—but not out of business, unless his expected profits at A' and B' are negative.

The analysis of the polar case in which there is free entry into moneylending is similar. I begin with the case in which the borrower is unrationed in the market for institutional loans. If Ey_A in panel 1 of figure 2 exceeds Ey_C in figure 1, informal lenders will go out of business. Conversely, if Ey_C exceeds Ey_A , institutional lenders will find no clients. In the case in which the borrower is rationed in the institutional segment of the market, everything hinges on whether $E\pi_B$ is positive or negative. If it is positive, institutional lenders will find no clients; if it is negative, informal lenders will go out of business.

Empirical Evidence: Nonexclusive Contracts by Institutional Lenders

The above analysis affords some useful insights, but we must now examine whether the key assumption that exclusive contracts are enforceable is empirically relevant. Table 9 indicates that in the WBRPO's villages, a substantial proportion of borrowers obtained credit from both informal and institutional sources in Punjab, which is perhaps the most interesting case in this connection. In Andhra Pradesh and Bihar the proportions are much smaller, but they are

Table 9. *Borrowing Households in the WBRPO's Villages, Rabi Season, 1980-81, by Source*

State and borrower	Percentage of households borrowing from:			Total
	Informal lenders only	Institutions only	Both	
<i>Andhra Pradesh</i>				
Cultivators	70.9	21.6	7.5	100.0
All households	79.6	14.2	6.2	100.0
<i>Bihar</i>				
Cultivators	72.7	18.1	9.2	100.0
All households	84.4	11.9	3.7	100.0
<i>Punjab</i>				
Cultivators	27.2	27.7	45.1	100.0
All households	47.2	20.4	32.4	100.0

Source: Bell and Srinivasan (1985).

still significant among cultivators. In commercialized areas, therefore, it seems that the working assumption of contractual exclusivity by institutions needs to be scrapped.

At the time of the survey in Punjab, the rate of interest on loans from traders was typically 18-24 percent a year, whereas institutions were charging about 11 percent. Thus if the lower rate on institutional loans was not eroded by higher transactions costs, one would expect borrowers to seek institutional finance first. Only if they failed to obtain as much as they desired would they then consider seeking private finance. That is, rationing by institutional agencies might result in a spillover of demand into the informal segment of the credit market.

Support for this hypothesis is provided by table 10, which summarizes the transactions of the sample of Punjabi cultivating households which were members of cooperatives. First, if the real cost of credit from both sources were the same and there were no rationing, borrowers would tend to go to one source alone, thereby avoiding the transactions cost of separate deals. In fact, 40 percent of the sample obtained credit from both sources. Second, those who borrowed from both sources borrowed, on average, almost exactly as much from cooperatives as those who borrowed from cooperatives alone, which suggests that cooperative credit was rationed. Third, those borrowing from cooperatives alone greatly outnumbered those borrowing solely from informal sources, which is also consistent with cooperative credit being cheaper than informal credit. Fourth, in regard to the timing of borrowing, of the eighty households which borrowed from both sources, forty-six transacted with those sources in different months (the smallest unit of time in the WBRPO survey). Of those forty-six, thirty-one borrowed from the cooperatives before turning to private sources, a result which falls well inside the critical region of a test of size 0.05 of the null hypothesis that the probability of that event is one-half (Bell, Srinivasan, and Udry 1990).

Table 10. *Credit Transactions of Punjabi Households Belonging to Cooperatives, 1980-81*

<i>Source</i>	<i>Households (number)</i>	<i>Average loan (rupees)</i>
None	37	0
Cooperative only	58	3,674
Informal only	21	2,622
Both	80	8,716
cooperative	—	3,347
informal	—	5,279
Total	196	

—Not available.

Source: Bell, Srinivasan, and Udry (1990).

This last result suggests that cooperatives were not well placed to enforce exclusive contracts. In that case it must be ascertained whether the moneylender would have any interest in preventing the borrower from taking an institutional loan. Because the institutional finance will permit an expansion of the borrower's activities, if the moneylender is in a position to exercise first claim on the returns produced by the borrower's activities, the institutional loan will, in general, improve the moneylender's expected returns from his loan. This question is pursued below.

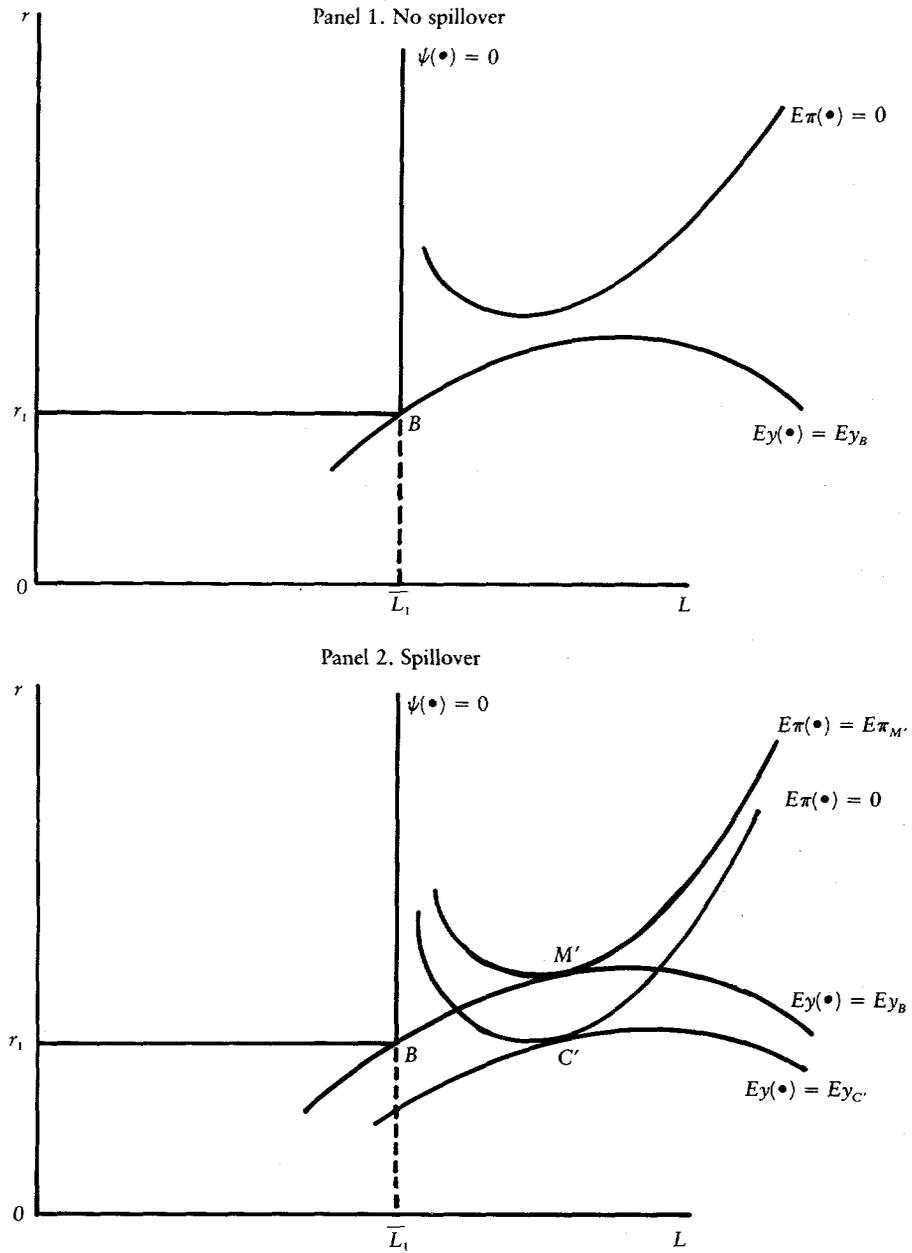
Equilibrium with Nonexclusive Institutional Contracts

With nonexclusive institutional contracts, the borrower's opportunity set takes the form depicted by the heavy curves in figure 3, in which it has been assumed that the lowest rate the moneylender could charge and still make nonnegative expected profits, namely, i , exceeds r_1 . The boundary of that opportunity set is made up of $\psi(\bullet) = 0$ and an iso-expected-profit contour, which is a member of the lender's map drawn with the point $(\bar{L}_1, 0)$ as origin to reflect the fact that the borrower seeks institutional finance first. The location and shape of that contour will depend on the private lender's knowledge of what dealings his client had with the cooperative or bank and the ease of entry into lending activities. In Bell (1990) it is established that the contours of the borrower's preference map become steeper in this setting, while those of the informal lender are unchanged or become less steep, depending on the information available to the lender on the borrower's dealings with the institutional credit agency.

The only interesting case is that in which the borrower is rationed in the institutional segment of the market. Because he deals with two lenders, the question of debt seniority must be settled first. As already argued, the moneylender is in a much better position to exercise first claim on the returns from the borrower's activities.

In panel 1 of figure 3, the contour $Ey(\bullet) = Ey_B$ lies completely below the zero-expected-profit contour $E\pi(\bullet) = 0$, which is the most favorable menu of contracts that any moneylender would offer. Hence, although the borrower has

Figure 3. *Competition between an Institutional and an Informal Lender: Nonexclusive Contracts*



unsatisfied demand for finance at the parametric rate r_1 , no selection from the menu of contracts offered by the lender affords an improvement over B , and there is no spillover of demand into the unregulated segment of the market.

Two further cases are depicted in panel 2, where it is assumed that the

contour $E\gamma(\bullet) = E\gamma_B$ intersects the contour $E\pi(\bullet) = 0$. First, if there is free entry into moneylending for those willing to invest in acquiring inside knowledge about potential clients, then lenders will earn zero expected profits and each borrower will face a menu of loan contracts described by the contour $E\pi(\bullet) = 0$. In that case, the borrower will choose point C' , where an iso-expected net-income contour is tangent to $E\pi(\bullet) = 0$. Second, private lenders may have sufficient market power to keep would-be borrowers at their reservation levels of expected net income, given the opportunities defined by $\psi(\bullet) = 0$. In that case, the moneylender will choose point M' , where an iso-expected-profit contour is tangent to $E\gamma(\bullet) = E\gamma_B$. This involves making the borrower an all-or-nothing offer of $(L_{M'} - \bar{L}_1, r_{M'})$.

Intermediation between Institutional Lenders and Moneylenders

I turn now to the effects of intermediation between institutional lenders and informal lenders on the terms and conditions of loans to rural households. To start with, suppose there is no uncertainty, natural or strategic. Then a fall in the moneylender's cost of funds will result in a fall in the rate of interest he charges, whether the market is perfectly competitive or he is a monopolist. Moreover, unless he exercises perfectly discriminating monopoly, his clients will also be better off. Indeed, if there is perfect competition and marginal costs are (locally) constant, they will capture the entire gain.

In the presence of uncertainty, these conclusions continue to hold when suitably restated. With free entry into lending, expected profits will be zero. The associated iso-expected-profit contour in figure 2 will shift downward (and perhaps rotate) as the lender's cost of funds declines, and all gains will be captured by his clients. In the case of a monopoly with exclusive contracts, all gains will accrue to the lender unless the terms of the contract are constrained by an active threat of strategic default by the borrower, in which case the gains will be shared to some degree.

There remains the closely related matter of arbitrage between the formal and informal segments of the credit market. Anyone who obtains a loan from an institutional lender has the option of relending the money to another individual, usually at a higher rate. Three factors impose a limit on such arbitrage: individuals' access to loanable funds from institutions is limited; relending requires inside knowledge of the client (the costs of acquiring this knowledge are partly reflected in the spread between interest rates in the two segments of the market); and other activities, such as cultivation, may be more attractive at the margin than moneylending.

If there is free entry into moneylending for anyone willing to acquire inside knowledge on a group of clients, and if enough would-be lenders do have access to unlimited funds at the rate of, say, r_1 , then expected profits from lending will be zero in the long run. If, further, some would-be borrowers have excess demand for loans at the rate r_1 and institutions cannot enforce exclusivity, then equilibrium will be at point C' in panel 2 of figure 3, as argued above.

V. FIVE PROPOSALS FOR PUBLIC POLICY

The main object of Indian public policy toward rural credit has been to ensure cheap and plentiful credit to all rural households. The chosen instruments for this purpose have been, first, the promotion of cooperatives, and then, following the nationalization of the commercial banks two decades ago, a concentrated push to establish branch banking in rural areas. These policies have certainly enjoyed some success in attaining the objective, but much less completely than the official estimates might suggest. The moneylender's grip has been loosened in commercialized areas but remains tight in backward ones, where credit is dear and inadequate. Access to institutional credit is much easier, and credit limits far more generous, for the well-to-do than the rural poor, though intermediation probably produces some benefits indirectly for the latter.

For some time, however, institutions have been plagued with defaults, and the cooperative sector is in a sorry condition in many states. In the period 1973-74 to 1985-86, overdue agricultural loans expressed as a proportion of scheduled repayments rose from 23 percent to 45 percent in the case of the land development banks, hovered around 40 percent in the case of primary cooperatives, and fell slightly from 49 percent in the case of the commercial banks (RBI 1988).

It is in this context that public policy needs reexamination. Each of the following proposals draws on a different feature of the foregoing discussion.

Proposal 1: Improve the Decennial Surveys

On the principle that description should precede prescription, the evaluation of the official evidence in section I suggests that the design and execution of the most recent decennial surveys were not fully satisfactory. To that end, serious consideration should be given to a return to the sampling design employed in 1961-62, which involved just over 2,000 villages and forty households per village. As Panikar and others (1988) have argued, this would lead to more efficient estimates of the proportion of households that are indebted and of total indebtedness.

In regard to nonsampling errors, with forty households per village this design lends itself to the use of a resident enumerator in each village, along the lines of the WBRPO's and ICRISAT's surveys. Given the sensitivity of the questions to be posed, long-term residence seems strongly desirable to reduce nonsampling errors. Two other measures suggest themselves. First, there should be a drastic reduction in the size of, and hence resources devoted to, the state samples in favor of those canvassed by the NSSO, which is one of the most experienced and capable survey organizations in the developing world. Second, particular attention should be paid both in the questionnaires and in the training of the enumerators to credit transactions arising in connection with trade, especially forward sales. In the WBRPO's survey, many loans came to light in the course of posing questions on households' purchases and sales.

A return to the design of earlier surveys would also improve survey coverage. There has been no investigation of the supply side of the market after 1951–52. Thus, absent systematic evidence on the activities of private lenders and institutions alike, it is very hard to arrive at an informed view of, for example, the nature and extent of intermediation and the competitive structure of the market. This investigation should be resumed.

Proposal 2: Use the Knowledge of Informal Lenders in the Formal Sector

It should be recalled that the moneylender was to have no role in the comprehensive scheme of cooperatives advocated by the authors of the *All-India Rural Credit Survey* (RBI 1954). Yet they also pointed to his vital knowledge of clients' "character and repaying capacity," which knowledge, they asserted, cooperatives did not fully possess (RBI 1954, p. 171). The desire to put the moneylender "in his place" was understandable, as was the fear that, once admitted to the cooperative, he would dominate it. But by keeping him out, the cooperatives were also denied direct access to his knowledge. Moreover, the way was then left open for the agriculturist moneylender, whose membership in the cooperative as a cultivator was to be eagerly sought. Leaving aside the merits of this policy in the 1950s, do current conditions and circumstances warrant its revision?

Although both cooperatives and the banks have had serious problems with overdue loans, the sources of their problems probably were not the same. Despite the concerns about the moneylender's vital knowledge of his clients' character, it should be noted that the members of a cooperative belong to the same community and know a good deal of one another's affairs. Thus the main difficulty would seem to be not so much one of information but of enforcement (Wade 1988). For the banks, however, inadequate information about their clients' characteristics and activities surely poses a severe problem, because banks have expanded their lending very rapidly from a small base and have been under constant political pressure to continue this expansion.

One way of alleviating the banks' difficulties would be to permit them to employ private lenders as their agents. In the commercialized areas of India the importance of traders and commission agents as sources of rural credit indicates that there are numerous private lenders who are well placed to grant and recover loans on behalf of institutions. In the 1970s such arrangements were adopted in North Arcot by banks and private fertilizer companies for dealers in fertilizer. The dealers in question were selected from a group of farmers who were not dealers in grain, and their lending and recovery activities were monitored by both the companies and the banks. The formal exclusion of dealers in paddy and rice, however, showed that the old reservations concerning their social usefulness as lenders lingered on. Be that as it may, the substantial intermediation that undoubtedly exists implies that many private lenders are already, in effect, acting as agents of cooperatives and commercial banks. Thus the proposal made here would regularize their status and perhaps encourage further entry by other private agents and greater activity by all lenders. It

would also enable the banks to concentrate more heavily on mobilizing rural deposits, a task in which they have enjoyed considerable success.

In support of this proposal, there is at least one other well-documented instance in which private lenders have been engaged by institutional lenders to act as their agents in granting and recovering loans. Wells (1978) reports on a fairly successful scheme organized by the Agricultural Bank of Malaysia, in which cooperatives, farmers' organizations, and private traders were appointed, after screening, as local credit agents of the bank. The bank set the rate of interest the agents could charge clients and the commission they received. In the early 1970s, these interest rates were 9 percent and 6 percent per season on unsecured and secured loans, respectively, with a 3 percent commission rate. These arrangements gave farmers some measure of choice and gave agents an incentive to compete for borrowers. Wells notes that the decision to admit informal lenders into the scheme was controversial, but that their superior performance in utilizing lines of credit from the bank and recovering loans vindicated the decision to include them.

Two questions remain. First, how should the terms and conditions of loans to households be regulated? Second, what is the appropriate design of a system of incentives? The scheme devised by the Agricultural Bank of Malaysia stipulated both the rate of interest and the commission that private agents could charge. As described by Wells, it lacked specific incentives for agents to compete for good borrowers and to take other steps to ensure recovery, because the commission rate was apparently linked to the volume of funds disbursed. One way of overcoming this potential defect would be to base commission payments on agents' success in securing repayment of the loans they advance, with a small salary to make the burden of lender's risk tolerable (Miracle 1973). Such a (linear) scheme would, of course, still leave the institution with the option of setting the rate of interest on loans.

Proposal 3: Interlink Institutional Credit with Marketing and Supply

The authors of the *All-India Rural Credit Survey* (RBI 1954, vol. 2) argued persuasively that cooperatives would be more profitable if they also engaged in business related to lending, such as the supply of inputs and marketing of outputs, which—if credit, input supply, and marketing transactions are bundled—is interlinking by any other name. This form of interlinking is clearly valuable to traders and commission agents, not least because it mitigates the problem of enforcement. The RBI's recommendation was taken up only recently, as part of the Integrated Rural Development Programme. Whether it will reduce cooperatives' overdue loans remains to be seen. In any event, such vertical integration is a potentially useful step toward the often-stated objective of curbing the power of private traders in commodity markets, should it exist.

Proposal 4: Do Not Restrict the Trader-Moneylender

It was argued in section IV that the effect of introducing institutional lenders into a rural credit system depends heavily on the ease with which private agents

can enter into moneylending activities. If entry is fairly easy, the threat of entry will keep informal lenders' expected profits close to zero. Thus the institutions' costs of supervision under proposal 2 will be modest, and there is no cause to worry about moneylender-traders capturing integrated credit-cum-marketing cooperatives because the associated rents will be small. It is important to note that this conclusion also holds if private loans are interlinked with the marketing of output, as is commonly the case in commercialized areas, where traders and commission agents are numerous.

In these circumstances the activities of the trader-moneylender should not be restricted. It has been argued that commercialization and the growth of a marketed surplus have fostered competition in credit markets, both among trader-moneylenders and between informal and institutional lenders. Hence, the avowed intention of the government to drive the private trader out of commodity markets and to supplant him with state trading organizations with exclusive purchasing rights would—whatever be its other merits—have highly adverse effects on rural credit markets. In more commercialized areas there would be adverse consequences also for agricultural output and incomes. Promoting credit-cum-marketing cooperative societies would be far preferable to banning private trade in commodities.

If informal lenders are few and entry is difficult, however, the above proposals will require closer (and more costly) supervision of these lenders' activities. The opportunity to borrow from an institution also imposes a limit on the terms an informal lender can exact, and thus provides a form of indirect regulation of his activities. Whether such arrangements will bring about a substantial improvement in the borrower's lot depends on how the institutions actually function. It is often remarked that the behavior of the institutions' officials is influenced by the profitability of private moneylending. Thus a borrower might face the unappetizing choice between a usurious loan from the local moneylender and a hefty side payment to the official who sanctions institutional loans. In that case, calls for strict regulation of the informal lender's activities and an expansion of cheap institutional credit will, if heeded, create substantial opportunities for rent-seeking within the institutions. The question of what should be done in backward areas is not, therefore, by any means fully resolved by the preceding discussion.

Proposal 5: Use Direct Measures to Raise Incomes in Undeveloped Areas

The claim that credit is comparatively plentiful and cheap in commercialized areas is hardly new and should not be especially controversial. For example, Harriss (1982) has persuasively argued as much in the case of North Arcot. In undeveloped areas, however, credit is scarce and dear, and the moneylender, often in the guise of the big cultivator, has a firm grip on village economic life. Casual observation of such areas suggests that their cooperatives are enfeebled or dormant and that those who staff the few branches of commercial banks settle for a quiet, or even venal, life, thus leaving the private lender's power unchallenged.

It is probable that interventions in the credit market will do little to remedy the miserable conditions of life for the people of such areas. As argued in section IV, only those borrowers with fair access to some institutional credit will be able to drive a more favorable bargain with the moneylender. If, moreover, the latter gets his hands on some institutional credit—as he usually will—he will also capture most or all of the gains from the resulting reduction in his cost of funds when making loans of his own. Most experience also suggests that in the circumstances considered here, the infusion of loanable funds through institutional lenders is too limited to make such credit widely available—except at a very heavy cost to the government treasury. Attention should be focused, instead, on raising agricultural productivity and incomes directly. This will certainly require an initial increase in cultivators' working capital. But the amount in question should not be exaggerated, and there is ample evidence that even quite poor households are able to muster some savings. Thus an infusion of institutional credit is not necessary to get the process started. If the experience of commercialized areas of India is any guide, informal lenders and institutional credit agencies will then follow, so that discussion of appropriate intervention in credit and related markets will then become relevant.

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